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Indian Standard

TEXTILE MACHINERY AND ACCESSORIES — FLAT WARP KNITTING MACHINES — VOCABULARY

PART 2 WARP LET-OFF, FABRIC TAKE-UP AND BATCHING

UDC 677.055.62 : 677.54.823/825 : 001.4

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110 002

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Knitting Machinery Sectional Committee, TX 22

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 8640-2 : 1990 'Textile machinery and accessories — Flat warp knitting machines — Vocabulary — Part 2 : Warp let-off, fabric take-up and batching', issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendation of the Knitting Machinery Sectional Committee and approval of the Textile Division Council.

Only English language text in this International Standard has been retained while adopting it as Indian Standard.

In this Indian Standard, the following International Standard is referred to. Read in its place the following:

International Standard	*Indian Standard*	*Degree of Equivalence*
ISO 5248 : 1982 Textile machinery and accessories — Dyeing and finishing machinery — Vocabulary for ancillary devices	IS 11049 : 1984 Vocabulary for ancillary devices for dyeing and finishing machinery	Identical

Indian Standard

TEXTILE MACHINERY AND ACCESSORIES — FLAT WARP KNITTING MACHINES — VOCABULARY

PART 2 WARP LET-OFF, FABRIC TAKE-UP AND BATCHING

Scope

This part of ISO 8640 defines the basic terms specifically related to the warp let-off and the fabric take-up and batching parts of flat warp knitting machines. The terms are subdivided into the following areas:

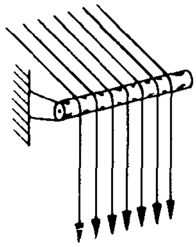
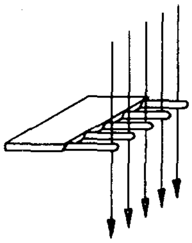
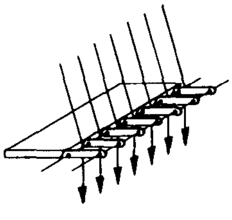
1 Yarn guiding and tensioning devices
2 Yarn carriers and their storage
3 Warp let-off devices
4 Fabric take-up and batching devices

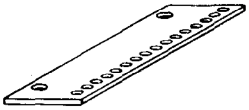
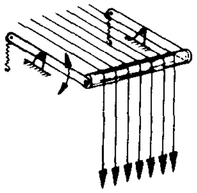
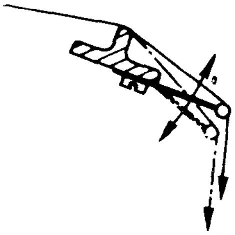
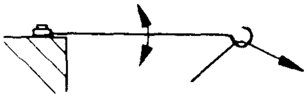
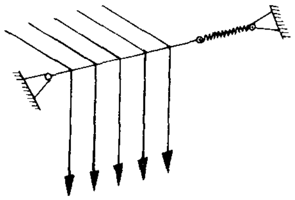
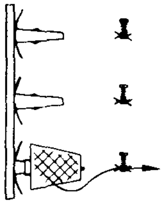
The figures illustrate the working principles of the various combinations. They do not represent the only, or even the most common, arrangement.

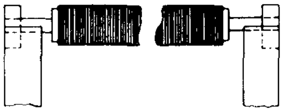
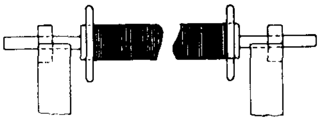
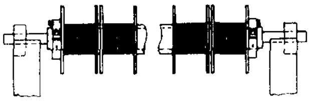
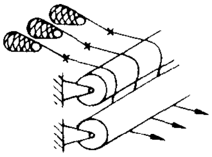
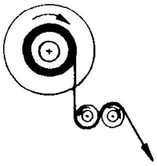
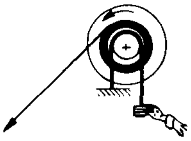
Normative references

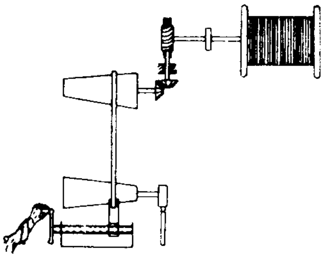
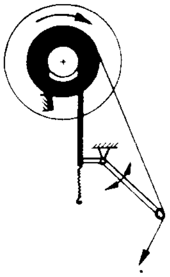
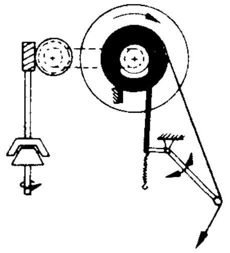
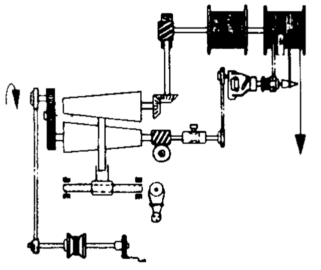
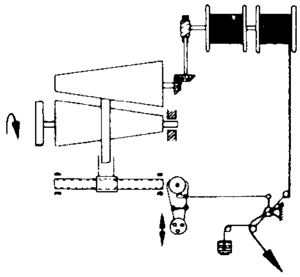
The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 8640. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8640 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

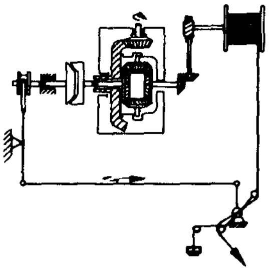
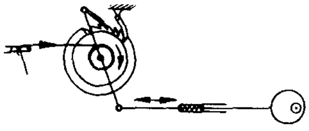
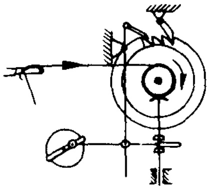
ISO 5248 : 1982 Textile machinery and accessories — Dyeing and finishing machinery — Vocabulary for ancillary devices

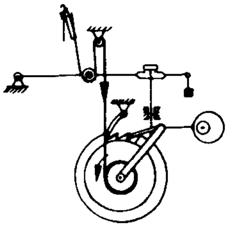
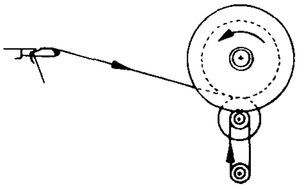
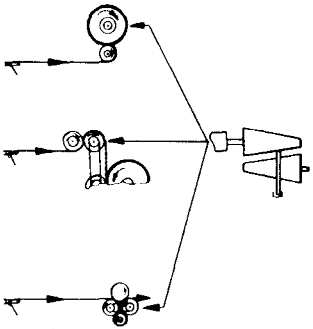
Reference	Term	Definition/illustration
1	Yarn guiding and tensioning devices	Devices which separate, guide and/or change the direction and/or tension of single ends or warp sheets between the yarn carriers and the knitting elements.
1.1	Yarn roller or rod	Device which alters the direction of the ends. (See figure 1.) (See ISO 5248.)  Figure 1
1.2	Yarn sley	Device which separates the ends. (See figure 2.)  Figure 2
1.3	Directing sley	Device which separates and alters the direction of the ends. (See figure 3.)  Figure 3

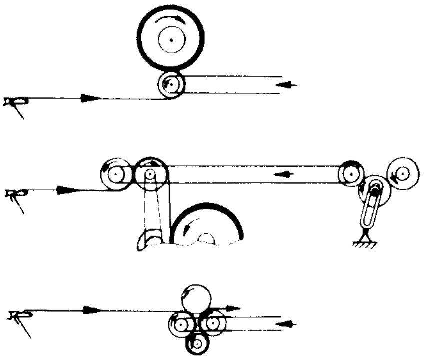
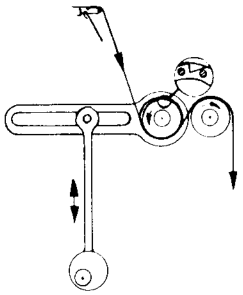
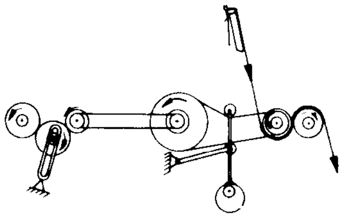
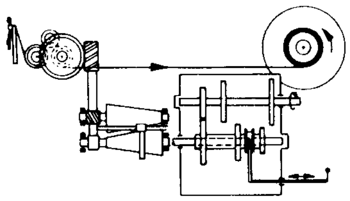
Reference	Term	Definition/illustration
1.4	Hole strip	Device which separates and alters the direction of the ends. (See figure 4.)  Figure 4
1.5	Tension rail	Device which alters the direction of and tensions the yarn sheet. (See figures 5 and 6.)  Figure 5  Figure 6
1.6	Tension finger	Device which alters the direction of and tensions the single end. (See figure 7.)  Figure 7
1.7	Tension wire	Device which alters the direction of and tensions the yarn sheet. (See figure 8.)  Figure 8
2	Yarn carriers and their storage	Devices which hold single ends or yarn sheets so that they are available for feeding to the knitting elements.
2.1	Creel with yarn package holders	 Figure 9

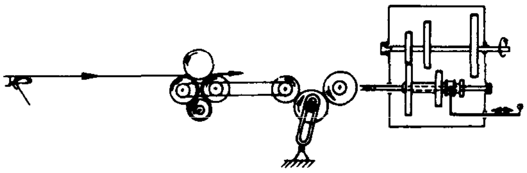
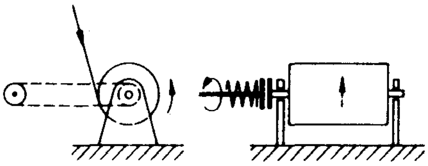
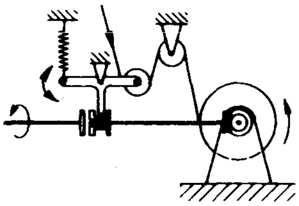
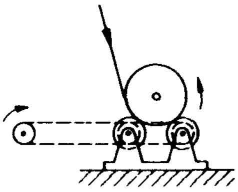
Reference	Term	Definition/illustration
2.2	Warp beams	Carrier shaft without flanges on which the ends are wound. (See figure 10.)  **Figure 10** Carrier shaft with flanges on which the ends are wound. (See figure 11.)  **Figure 11** Carrier shaft with assembled sectional beams on which the ends are wound. (See figure 12.)  **Figure 12**
3	Fadenablaufeinrichtunge	Devices which control the delivery of the warp threads and ensure the required tension and regularity for knitting.
3.1	Warp let-off rollers	Controlled-speed rollers or pairs of rollers which pull off the ends from the bobbin holders, creels, and sectional or warp beams. (See figures 13 and 14.)  **Figure 13**  **Figure 14**
3.2	Warp beam let-off devices	Devices which control the delivery of the ends from the warp beams to the knitting elements to make stitch formation possible.
3.2.1	Hand-regulated warp let-off devices	Devices which are entirely regulated by hand to ensure the required yarn tension or yarn length during stitch formation. The regulation is carried out by means of brakes (see 3.2.1.1) or gears (see 3.2.1.2).
3.2.1.1	Hand-regulated warp let-off devices — regulation by means of brakes	 **Figure 15**

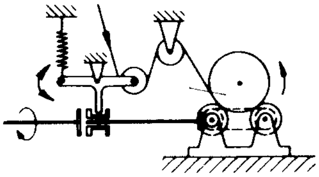
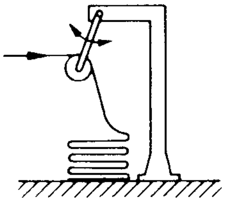
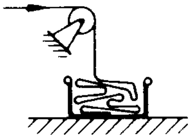
Reference	Term	Definition/illustration
3.2.1.2	Hand-regulated warp let-off devices — regulation by means of brakes	 Figure 16
3.2.2	Self-regulating warp let-off devices	Devices which are adjusted to maintain a required yarn tension or yarn length for knitting. They are set manually at the beginning of the warp and control automatically the yarn tension or yarn length.
3.2.2.1	Brake	Retarding device for the warp beam which is released when the set yarn tension is exceeded. (See figure 17.)  Figure 17
3.2.2.2	Brake with driving aid	Retarding device with a driving aid for maintaining the set tension by braking or releasing the warp beam. (See figure 18.)  Figure 18
3.2.2.3	Regulating gears	Devices with components for measuring and comparison, or similar mechanisms, which increase the beam speed. They are regulated by the yarn length (see figure 19) or by the yarn tension (see figure 20).  Figure 19  Figure 20

Reference	Term	Definition/illustration
3.2.2.3.1	Regulating gears with infinitely variable mechanical beam drive	Regulating gears driven, for example, by a cone drive.
3.2.2.3.2	Regulating gears with infinitely variable hydraulic beam drive	Regulating gears driven by a hydraulic pump system.
3.2.2.3.3	Regulating gears with infinitely variable electrical beam drive	Regulating gears driven, for example, by a brake motor or electronic-controlled stepper motor.
3.2.2.3.4	Regulating gears with beam drive by differential	 Figure 21
4	Fabric take-up and batching devices	Devices and their drives which pull, hold and batch store knitted fabric. The rate of withdrawal of the fabric from the knitting elements is adjustable and is controlled by either the fabric tension or the fabric length.
4.1	Take-up and batching on the same shaft	Device which pulls, holds and batches fabric on the same shaft.
4.1.1	Intermittent drive	(1) Drive which is varied by means of an intermediate part (e.g. a spring or gravity). It pulls off the fabric with a predetermined tension and batches it. (See figure 22.)  Figure 22 (2) Drive which varies in relation to the beam diameter. It pulls off the fabric with a predetermined tension and batches it. (See figure 23.)  Figure 23

Reference	Term	Definition/illustration
4.1.2	Intermittent or continuous drive	Variable drive which is triggered by the taken-up length of knitted fabric and regulated by a tension scale. It pulls off the knitted fabric with a predetermined tension and batches it. (See figure 24.)  Figure 24
4.1.3	Tangential continuous drive	Drive which acts on the circumference of the fabric roll and pulls off the knitted fabric to a predetermined length and batches it. (See figure 25.) (See ISO 5248.)  Figure 25
4.2	Fabric take-up and batching by separate devices	Process in which the fabric is pulled by several axial-driven rollers and collected by different devices.
4.2.1	Take-up	One or several axial-driven rollers partially covered by the knitted fabric. These pull off the knitted fabric to a predetermined length.
4.2.1.1	Continuously driven take-up	Continuous or step-controlled take-up.
4.2.1.1.1	Infinitely variable continuously driven take-up	 Figure 26

Reference	Term	Definition/illustration
4.2.1.1.2	Stepwise variable continuously driven take-up	 Figure 27
4.2.1.2	Intermittently driven take-up	Continuous or step-controlled take-up.
4.2.1.2.1	Infinitely variable intermittently driven take-up	 Figure 28
4.2.1.2.2	Stepwise variable intermittently driven take-up	 Figure 29
4.2.1.3	Continuously driven take-up device supplying several different rates of take-up	Continuous or step-controlled take-up. The control may be either mechanical (see 4.2.1.3.1 and 4.2.1.3.2) or electronic (see 4.2.1.3.3 and 4.2.1.3.4).
4.2.1.3.1	Mechanically controlled infinitely variable continuously driven take-up device supplying several different rates of take-up	 Figure 30

Reference	Term	Definition/illustration
4.2.1.3.2	Mechanically controlled stepwise variable continuously driven take-up device supplying several different rates of take-up	 Figure 31
4.2.1.3.3	Electronically controlled infinitely variable continuously driven take-up device supplying several different rates of take-up	Continuous or step-controlled take-up. The control is by a servo motor.
4.2.1.3.4	Electronically controlled stepwise variable continuously driven take-up device supplying several different rates of take-up	Continuous or step-controlled take-up. The control is by a mechanical variator.
4.2.2	Fabric batching	Collection of the knitted fabric by a batching or storing device.
4.2.2.1	Batching device	Device with axial (see 4.2.2.1.1) or tangential (see 4.2.2.1.2) drive for fabric batching.
4.2.2.1.1	Axially driven batching device	Batching device with an increasing (see 4.2.2.1.1.1) or a regular (see 4.2.2.1.1.2) driving force.
4.2.2.1.1.1	Axially driven batching device with increasing driving force	 Figure 32
4.2.2.1.1.2	Axially driven batching device with regular driving force	 Figure 33
4.2.2.1.2	Tangential drive batching device	Batching device with a constant (see 4.2.2.1.2.1) or a regulated (see 4.2.2.1.2.2) circumferential speed.
4.2.2.1.2.1	Tangential drive batching device with constant circumferential speed	 Figure 34

Reference	Term	Definition/illustration
4.2.2.1.2.2	Tangential drive batching device with regulated circumferential speed	 Figure 35
4.2.2.2	Folding device	Device which produces regular (see 4.2.2.2.1) or irregular (see 4.2.2.2.2) folding.
4.2.2.2.1	Regular folding device	 Figure 36
4.2.2.2.2	Irregular folding device	 Figure 37

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